Casco Inc.

London, Ontario

Casco's environmental policy outlines the committment to environmental protection and to the broader integration of environmental and economic priorities, in all aspects of its business.

"To this end, we are committed to efficiently use raw materials and energy, and to reduce waste. The green analysis of our London plant helped us to identify opportunities to enhance our resource conservation program."

David Gardner, P.Eng.
Operations Manager
Casco Inc.

Casco London production facility with bulk syrup transport carrier.

THE COMPANY

Casco's plant in London, Ontario, was built in 1979 to process corn into corn starch, corn syrups, germ, gluten meal and gluten feed. Three cogeneration units to produce 12 MW of electrical power were installed in 1994. An expansion of the facility in 1994/5 increased production by 35 per cent. The plant operates continuously seven days a week.

THE CHALLENGE

After the cogeneration and expansion projects at the London plant were completed, Casco intended to focus capital investment and process optimization towards making its operations more efficient, conserving resources and protecting the environment. There was particular concern with the large costs of energy and water and for wastewater treatment. The company also wanted to improve the quality of effluent from its facility.

Proctor & Redfern, a firm of consulting engineers with considerable experience in the food industry, was hired to analyze plant operations and identify opportunities for reducing energy and water use and effluent generated.

OPPORTUNITIES

The green analysis focused on the following areas considered to be high priority by plant management:

* reducing water consumption;
* recovering product;
* decreasing B.O.D;
* reducing energy use.

RECOMMENDATIONS

Although Casco had been actively pursuing ways to optimize its plant operations, the green analysis revealed more than a dozen new ways to save energy and water, and improve environmental performance.

The major recommendations were to:

* optimize the cooling tower operation by using variable speed pumps and temperature controls. This would allow the shutdown of one pump and fans during the winter and result in annual electrical savings of $79,200, for a payback of 0.6 years;
* eliminate the blowdown step in regeneration of the ion exchange resins. An immediate annual saving of $47,520 in city water and wastewater treatment would follow;
* use on-line T.O.C. analyzers to precisely determine when valuable product is being lost. This would save a large amount of sugar and product and result in reduced waste treatment. The annual savings are estimated at $176,700 for a payback of 0.6 years;
* treat effluent to recover biosolids that could then be converted for use as soil conditioners or additives to animal feed. This would save $149,650 a year with payback of 3 years.

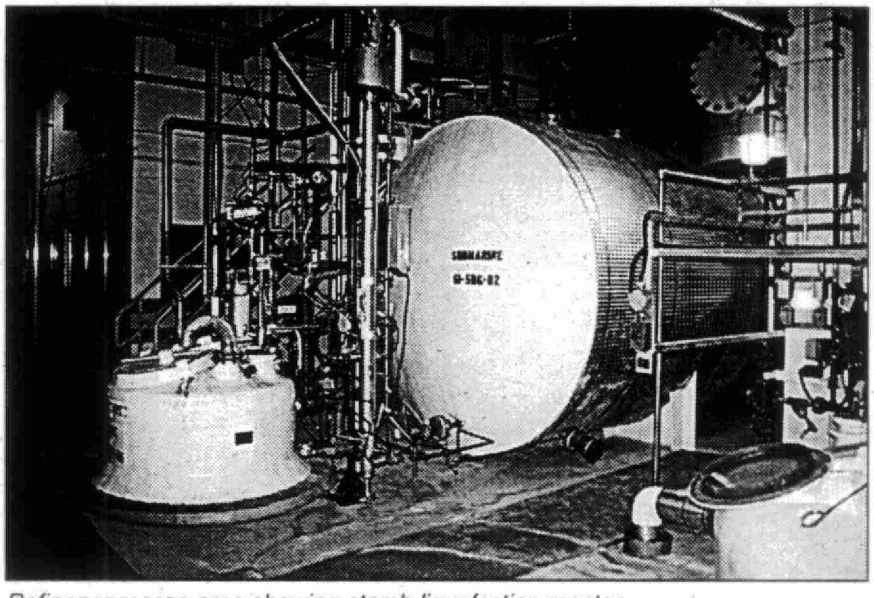
Casco has started to carry out these suggestions. The improvements recommended in the study could be duplicated in other food processing plants in Ontario.

POTENTIAL SAVINGS

Annual gross savings from carrying out the recommendations were estimated as follows:

✲ Electricity	$74,900
✲ Natural gas	52,948
✲ Liquid effluent	47,520
✲ B.O.D. reduction	450,826
✲ Water	222,522
✲ Product recovery	277,942
Total	**$1,126,658**

To realize the savings, the company would have to make a capital investment of $1,413,834. The simple payback would be 1.55 years, taking additional operating costs into account.



Refinery process area showing starch liquefaction reactor.

PARTNERSHIP IN POLLUTION PREVENTION AND RESOURCE CONSERVATION

Industrial companies doing business in Ontario may seek ministry/industrial services that will help them to:

- ✲ use energy and water more efficiently
- ✲ reduce, reuse and recycle solid waste, and
- ✲ reduce or eliminate liquid effluent and gaseous emissions.

Equipment and services supply companies can benefit from the information provided on technologies identified for business development.

FOR FURTHER INFORMATION, PLEASE CONTACT:

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MINISTRY OF THE ENVIRONMENT SERVICES

For information on Ministry of the Environment assistance to industry, please contact the Industry Conservation Branch at (416) 327-1492, Fax (416) 327-1261.

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This project profile was prepared and published as a public service by the Ontario Ministry of the Environment. Its purpose is to transfer information to Ontario companies about findings and recommendations of a resource conservation and environmental analysis conducted by a consulting engineering firm at an industrial plant in Ontario.

Pour tout renseignement en français au sujet du programme d'écologisation industrielle du Ministère de l'Environnement, veuillez composer le 416-327-1443, télécopieur 416-327-1261.

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